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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/607,696	06/27/2003	Gerhard Beckmann	107044-0036	7715
24267 7590 09/24/2007 CESARI AND MCKENNA, LLP 88 BLACK FALCON AVENUE BOSTON, MA 02210			EXAMINER CHUO, TONY SHENG HSIANG	
			ART UNIT 1745	PAPER NUMBER
			MAIL DATE 09/24/2007	DELIVERY MODE PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/607,696	BECKMANN ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	Tony Chuo	1745	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 16 July 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1,7,10,27,29 and 30 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,7,10,27,29 and 30 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 14 June 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |  |
|--|--|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                     | 4) <input checked="" type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. <u>20070917-A</u> .                         |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application  |
| Paper No(s)/Mail Date _____.   | 6) <input type="checkbox"/> Other: _____.                          |

## **DETAILED ACTION**

### ***Response to Amendment***

1. Claims 1, 7, 10, 27, 29, and 30 are currently pending. Claims 2-6, 8, 9, 11-26, and 28 are cancelled. The amended claims do overcome the previously stated 102 rejections of claims 1, 7, 8, 10, and 27-29. However, upon further consideration, claims 1, 7, 10, 27, 29, and 30 are rejected under the following new 103 rejections. This action is made FINAL as necessitated by the amendment.

### ***Claim Rejections - 35 USC § 103***

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1, 7, 27, 29, and 30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tanizaki et al (JP 04-274174) in view of Reynolds et al (US 5985475).

The Tanizaki reference discloses a direct methanol fuel cell comprising: an anode chamber, a cathode chamber, and a fluid controlling assembly comprising a collector plate "10" that includes through-holes "8" disposed in a cathode chamber and a corresponding shutter plate "7" that includes through-holes "6" wherein the placement of the collector plate relative to the shutter plate results in an opening that permits the flow

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of fluids therethrough, and when closed restricts the flow of fluids into the cathode chamber, wherein the collector plate and shutter plate are planar components that include corresponding through-holes which when aligned create openings and can be adjusted relative to one another to control the rate of fluid flow through the through-holes (See Abstract).

However, Tanizaki et al does not expressly teach first and second components lined with a gas permeable, liquid impermeable film that controls the rate of flow of oxygen therethrough to control the cathode reactions, yet restricts the flow of liquid water therethrough such that humidity is maintained within the cathode chamber. The Reynolds reference discloses a gas permeable, liquid impermeable membrane "18" disposed in the cathode chamber that holds water vapor in the cell so that the cell does not dry out and prevents water vapor from entering the cell to prevent the cell from flooding (See column 6, lines 22-27 and Figure 2).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the Tanizaki fuel cell to include first and second components that are lined with a gas permeable, liquid impermeable membrane that controls the rate of flow of oxygen therethrough to control the cathode reactions, yet restricts the flow of liquid water therethrough in order to increase the efficiency of the fuel cell by maintaining the proper humidity within the fuel cell.

4. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Tanizaki et al (JP 04-274174) in view of Reynolds et al (US 5985475) as applied to claim 7 above, and further in view of Bruckner (US 2002/0016684).

However, Tanizaki et al as modified by Reynolds et al does not expressly teach a control system for variably actuating the position of at least one of the first and second components of the fluid controlling assembly. The Bruckner reference discloses a control unit "14" that regulates the mass flow rate of air that is fed to the fuel cell stack (See paragraph [0044]).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the Tanizaki/Reynolds fuel cell to include a control system for variably actuating the position of at least one of the first and second components of the fluid controlling assembly in order to regulate the power output of the fuel cell based on the quantity of process gas supplied to the fuel cell.

### ***Response to Arguments***

5. Applicant's arguments filed 7/16/07 have been fully considered but they are not persuasive.

The applicant argues that Reynolds teaches away from having enhanced control over the water vapor to the cathode. The examiner disagrees because Reynolds et al clearly teaches using a gas permeable membrane disposed in the cathode chamber to hold water vapor in the cell so that the cell does not dry out and to prevent water vapor from entering the cell to prevent the cell from flooding (See column 6, lines 22-27).

### ***Conclusion***

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP

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§ 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tony Chuo whose telephone number is (571) 272-0717. The examiner can normally be reached on M-F, 8:30AM to 5:00PM.

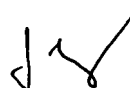
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick Ryan can be reached on (571) 272-1292. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic

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Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

TC

A handwritten signature in black ink, appearing to read 'J. Crepeau', with a checkmark-like flourish at the end.

**JONATHAN CREPEAU**  
**PRIMARY EXAMINER**